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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/622,044

07/16/2003

Mitsuru Kano

9281/4606

2263

7590

12/15/2004

Brinks Hofer Gilson & Lione
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EXAMINER

KIM, RICHARD H

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/622,044

Applicant(s)

KANO ET AL.

Examiner

Richard H Kim

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/16/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6,429,909 B1) in view of Kanou et al. (US 20040070709 A1)

Kim et al. discloses a device comprising an active matrix substrate comprising a plurality of scanning lines (Fig. 1, ref. 100), a plurality of signal lines intersecting the scanning lines (Fig. 1, ref. 400), switching elements provided near the respective intersections (Fig. 1, ref. 300), an insulating layer covering the scanning lines, the signal lines, and the switching elements (Fig. 3, ref. 500) and having contact holes connected to the switching elements (C1, C2, C3), and pixel electrodes (600) electrically connected to the respective switching elements through the contact holes formed in the insulating layer (col. 5, lines 30-37); a counter substrate facing the pixel electrode (Fig. 4, ref. 20); an a light modulating layer held between the active matrix substrate and the counter substrate (Fig. 4, ref. LC); wherein the contact holes are masked in a plan view (Fig. 1, ref. BM). However, the reference does not disclose a counter electrode.

Kanou et al. discloses a counter electrode (Fig. 1, ref. 55).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a counter electrode since counter electrodes are well known in the art to provide a potential across the light modulating layer to create a display.

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Referring to claims 2 and 3, Kim et al. and Kanou et al. disclose the device previously recited. Kim et al. does not disclose that each of the pixel electrodes is a diffusively reflective electrode, wherein the insulating layer has a light diffusion recess, and each diffusively reflective electrode is disposed in each of the recess and has a shape conforming to each recess.

Kanou et al. discloses that each of the pixel electrodes is a diffusively reflective electrode wherein the insulating layer has a light diffusion recess and each diffusively reflective electrode is disposed in each of the recess and has a shape conforming to each recess (Fig. 1, ref. 45, 48). (Fig. 1, ref. 48).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ is a diffusively reflective electrode wherein the insulating layer has a light diffusion recess and each diffusively reflective electrode is disposed in each of the recess and has a shape conforming to each recess since one would be motivated to "obtain a bright display because the luminance of the reflective LCD apparatus is determined by the inclination angle of the convex/concave structure of the reflection electrode" (paragraph 22).

Referring to claim 4, Kim et al. discloses a shielding layer provided on the counter substrate, for masking the contact holes in plan view (Fig. 4, ref. BM).

Referring to claim 6, Kim et al. discloses a plurality of contact holes arranged in the length direction of the scanning lines or the signal lines (C1-C4).

Referring to claim 7, Kim et al. discloses the device wherein each of the switching elements comprise a thin film transistor (col. 6, line 59) comprising a gate electrode extending from the corresponding scanning line (100), a gate insulating layer disposed on the gate electrode (200), a source electrode disposed on the gate insulating layer to extend from the

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corresponding signal line (S), and a drain electrode electrically connected to the pixel electrode through the contact holes formed in the gate insulating layer (D), and wherein the drain electrode has an extension extending from a portion positioned above the gate electrode toward the scanning line side of the signal line side so that the contact holes are connected to the extension (C4).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. and Kanou et al., in view of Yi et al. (US 2003/0063238 A1).

Referring to claim 5, Kanou et al. discloses a color filter layer (Fig. 4, ref. 20) and a light shielding layer for masking the contact holes in plan view (BM), both of which are provided on one of the active matrix substrates and the counter substrate. However, the reference does not disclose that the color filter layer comprises a plurality of color filters disposed corresponding to the reflective pixel electrodes, and the shielding layer is disposed between adjacent color filters.

Yi et al. discloses a color filter layer comprising a plurality of color filters disposed corresponding to the reflective pixel electrodes, and the shielding layer is disposed between adjacent color filters (Fig. 4, ref. 112a, 112b, 112c, 132).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a color filter layer comprising a plurality of color filters disposed corresponding to the reflective pixel electrodes, and the shielding layer is disposed between adjacent color filters since one would be motivated to reduce the steps of the manufacturing process (paragraph 22).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H Kim whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard H Kim
Examiner
Art Unit 2871

RHK


TARIFUR R. CHOWDHURY
PRIMARY EXAMINER